

**CRAB ORCHARD NATIONAL WILDLIFE REFUGE CERCLA PROJECT  
MONTHLY PROGRESS REPORT  
MARCH 2018**

**ADDITIONAL AND UNCHARACTERIZED SITES  
OPERABLE UNIT (AUS OU)**

**1.0 Actions toward Achieving Compliance**

*Feasibility Study (FS).*

FWS continues to provide technical direction to Shannon and Wilson Inc. (SWI) on the draft FS. The draft pilot includes a comparative analysis of alternatives for AUS Sites 0001, 0002, 0060, and 0A2B and technical memoranda attached as appendices. Written responses to Agency comments on the draft pilot FS, October 2017, were provided to the Agencies on March 22nd. A conference call was held with the Agencies on March 27th to discuss Agency comments. FWS will host a series of meetings/conference calls to resolve comments from the Agencies on the AUS OU RI/FS processes and build consensus on the remedial alternatives beginning in May. The draft FS is targeted for completion Summer, 2018.

*Natural Attenuation in Groundwater Work Plan and Quality Assurance Project Plan (QAPP) Addendum.*

USEPA approved the Natural Attenuation in Groundwater Work Plan and QAPP on March 27, 2018. Review of the preliminary data for the volatile organic constituents and carbon isotope data support degradation occurred in several wells. The results will be used to further inform alternative analysis in the FS. The remaining samples for TCE cometabolism samples will be collected early April.

*Sewer Line Vapor Threat Evaluation of Area 11.*

The findings suggest that the abandoned sewer line in Area 11 may function as a preferential migration pathway for contaminated groundwater and even perhaps create orphaned plumes. FWS continues to evaluate available information and the findings to assess the next steps.

*Area 8 Copper Site*

The pond is contaminated with dissolved copper from buried waste in a dump along the shoreline and beneath the water. The concentrations of copper can exceed water quality criteria for the protection of aquatic life with sufficient water retention period, but not above human health standards. There is a threat that the pond in Area 8 South discharges surface water through a culvert or overflows a low spot of the road under heavy rain events or high water levels into the creek. Surface water samples will be collected at a monthly interval and tested for dissolved copper at a location(s) near the culvert that discharges into the creek and where it overflows the low spot of the road. The dissolved copper concentration of 25 ug/l in a surface water sample collected March exceeded the aquatic water quality criteria.

*Draft Evaluation of Future Groundwater Risk*

The results of the evaluation indicated risks for human and ecological receptors and pathways related to potable and non-potable uses associated with the purposes of the Federal facility including conservation, recreation, industrial, and agricultural. Written responses to Agency

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comments were provided to the Agencies on March 23rd. FWS is revising the Groundwater Risk Assessment.

*Site 0001*

FWS is preparing a technical memo evaluating whether Site 0001 should remain in the FS, because the single elevated concentration of arsenic could not be repeated.

**2.0 Status/Results of Sampling, Tests, and Other Data**

- The results for groundwater samples collected for evaluation of natural attenuation the week of January 1st and March 21st are pending.
- The results for dissolved copper and hardness parameters, calcium and magnesium, were received for the surface water sample collected March 8<sup>th</sup> from Area 8 South Copper Pond. The dissolved copper concentration of 25 ug/L exceeded the water quality criteria for the protection of aquatic life (acute criteria 4.8 ug/L and chronic criteria of 3.6 ug/L).

**3.0 Actions Scheduled for Next Month**

- Evaluate results of monitored natural attenuation bench study.
- Review agency comments submitted on the technical memos.
- Continue to provide technical direction to S&W on preparation of the FS.
- Explore options for management or containment of surface water at Area 8 Copper Pond.
- Conduct surface water sampling at Area 8 Copper Pond.
- Collect remaining groundwater samples for monitored natural attenuation study.
- Prepare for series of conference calls to resolve Agency comments and build consensus on remedial alternatives preferences.

**4.0 Modification or Delays Encountered or Anticipated**

Completion of the draft FS will proceed per the AUS OU SOW and is targeted for 2018. The draft FS will incorporate the results of the monitored natural attenuation bench study.

**5.0 Other Significant Activities**

None to report.

**6.0 Personnel Changes**

None to report.

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**AREA 7 PESTICIDES SITE  
NON-TIME CRITICAL REMOVAL ACTION**

**1.0 Actions toward Achieving Compliance**

*Action Memorandum*

FWS prepared a draft Action Memo to select the preferred alternative consisting of demolition of four warehouses, excavation of soils, and off-site disposal of building materials and soils to a permitted landfill. This alternative is supported by the community, State, and the Agencies.

*Draft Remedial Design/Removal Action (RD/RA) Work Plan*

- FWS continues to provide technical direction to TRC on the removal action. Weekly coordination calls are held to discuss planning and details of the removal action.
- TRC completed the tree clearing work prior to the bat roosting season of April 1st pursuant to the EE/CA Work Plan Addendum approved by FWS.
- TRC submitted the draft Sampling and Analysis Plan on March 7th for FWS review.
- FWS provided comments on the Draft RD/RA Work Plan to TRC on March 10th and 18th. The RD/RA Work Plan will be an attachment to the Consent Decree for the removal action.

**2.0 Status/Results of Sampling, Tests, and Other Data**

None to report.

**3.0 Actions Scheduled for Next Month**

- Issue a signed Action Memo.
- Continue coordination and planning for the RD/RA.
- Review the draft Sampling and Analysis Plan.

**4.0 Modification or Delays Encountered or Anticipated**

None to report.

**5.0 Other Significant Activities**

None to report.

**6.0 Personnel Changes**

None to report.

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**PCB OPERABLE UNIT**

**1.0 Actions toward Achieving Compliance**

*Operations and Maintenance*

Operations and monitoring for the Plume One pump and treatment system continued without any down time. The average flow through the system was 3.3 gallons per minute. No PCBs were detected in the effluent.

A pair of bald eagles constructed a new nest in PCB OU Site 32. Adjustments are planned for the long term monitoring program to accommodate the breeding season for the bald eagles without missing any data collection requirements.

*Plume Two Remedial Design*

The consent decree amendment for the Plume Two interim remedy is under review by U.S. Department of Justice.

**2.0 Status/Results of Sampling, Tests, and Other Data**

None to report.

**3.0 Actions Scheduled for Next Month**

None to report beyond routine operations and maintenance of the pump and treatment system.

**4.0 Modification or Delays Encountered or Anticipated**

None to report.

**5.0 Other Significant Activities**

None to report.

**6.0 Personnel Changes**

None to report.